

Proposed Bungalow, Garage and External Works
at The Bungalow on Joys Green Road
in Lydbrook, Gloucestershire, GL17 9SX

Preliminary Ecological Appraisal
and Bat Scoping Survey

A report to:



Ms. Michele Ferrier

By:

Udall-Martin Associates Ltd.
Silvan, 5 The Common, Wellington Heath
Herefordshire, HR8 1LY
Tel: 07968 030448/07954 160468
E-mail: info@umassociates.co.uk
Web: www.umassociates.co.uk

July 2023

CONTRACT DETAILS	
Contract Title	The Bungalow, Joys Green Road, Lydbrook: Ecology
Contract No.	764/23
Client	Ms Michelle Ferrier
Survey Date	19th June 2023
Report Date	11th July 2023
Report Title	Proposed Bungalow, Garage and External Works at The Bungalow on Joys Green Road in Lydbrook, Gloucestershire, GL17 9SX: Preliminary Ecological Appraisal and Bat Scoping Survey

REPORT REVIEW/QUALITY ASSURANCE				
Personnel	Name	Signature	Position	Date
Prepared by	Susie Udall MSc MCIEEM CEnv		Consultancy Manager	11/07/2023
Reviewed by	Dwayne Martin		Principal Ecologist	11/07/2023

1 CONTENTS

EXECUTIVE SUMMARY	5
1 INTRODUCTION.....	7
1.1 General.....	7
1.2 Bat Legislation	8
2 SITE DESCRIPTION.....	9
3 METHODOLOGY	9
3.1 Baseline Ecological Conditions.....	9
3.2 Desk Study.....	9
3.3 Site Surveys	10
3.4 Baseline Evaluation Criteria	12
4 BASELINE ECOLOGICAL CONDITIONS.....	14
4.1 Desk Study.....	14
4.2 Site Surveys	19
4.2.1 Habitat Types	19
4.2.2 Habitat Descriptions.....	19
4.2.3 Target Notes.....	22
4.2.4 Protected/notable Species.....	22
5 ECOLOGICAL EVALUATION	24
5.1 Designated Nature Conservation Sites	24
5.1.1 Statutory Sites.....	24
5.1.2 Non-statutory Sites	25
5.2 Habitats.....	25
5.3 Protected/notable Species.....	27
5.3.1 Floral Species.....	27
5.3.2 Faunal Species.....	27
5.4 Main Potential Ecological Issues	29
6 RECOMMENDATIONS	30
6.1 Introduction	30
6.2 Mitigation Recommendations	31
6.3 Compensation Recommendations.....	33
6.4 Enhancement Recommendations.....	34

6.5 Further Survey Recommendations	35
References.....	36
Appendix 1: Figures	37
Figure 1: Proposed Bungalow Two-Storey Extension – Elevations	37
Figure 2: Garage as Existing and Proposed.....	38
Figure 3: Proposed New Retaining Wall	39
Figure 4: Site Plans – As Existing and Proposed.....	40
Figure 5: Extended Phase-1 Habitat Survey Area and Survey Results.....	41
Figure 6: Bat Scoping Survey Results	42
Appendix 2: Photographs	43
Appendix 3: Designated Nature Conservation Sites in the 2km Study Area.....	51
Appendix 4: Protected Species Legislation.....	52
Appendix 5: Procedure to Follow if Bats are Discovered during Building Works	54
Appendix 6: Native Species Suitable for Planting and Sowing.....	55
Appendix 7: Faunal Species Boxes Specifications	59

EXECUTIVE SUMMARY

Proposed Works

The proposed development works comprise a two-storey extension to an existing residential bungalow, demolition of a garage and re-build and demolition of a boundary wall and re-build. This will involve the removal of garden hedgerows and shrubs.

Method of Study

The brief was to assess the existing ecological value of the site, identify potential ecological issues associated with the proposed development works and make recommendations for general mitigation, compensation, enhancement and further surveys, as appropriate. A Preliminary Ecological Appraisal (comprising a desk study, an Extended Phase-1 habitat survey and a bat scoping survey of the site) was carried out.

Baseline Ecological Conditions

There are no statutory or non-statutory designated nature conservation sites on the survey site; however, there are two statutory sites (SAC and SSSI) (745m away from the site) and ten non-statutory sites (LWS) (closest is 520m away from the site) within the 2km study area. No rare or notable habitats are on the site. Bat droppings and features providing potential bat roosting habitat were found in/on the bungalow. No bat evidence or features providing potential bat roosting habitat were found on the garage. No bird nests were found on either building, although the buildings provide some potential nesting bird habitat (including dense ivy on the garage). The garden provides some limited potential badger sett building and foraging habitat, bat foraging and commuting habitat, amphibian and reptile cover and sheltering habitat and nesting bird habitat. Previous records for the 2km study area include badger, bats and reptiles.

Potential Ecological Issues

The potential ecological constraints associated with the proposed development of the site comprise, (i) loss, damage and disturbance to habitats, (ii) harm and injury to roosting bats due to bungalow extension works, (iii) loss of bat roosts due to bungalow extension works, (iv) potential loss/disturbance of bat foraging/commuting (due to hedgerow loss and new lighting), (v) potential harm to nesting birds, (vi) loss of bird nesting habitat and (vii) limited potential to harm common amphibians and reptiles. Further bat dusk emergence surveys of the bungalow are required. There are ecological opportunities through habitat creation and enhancements for faunal species.

Mitigation Recommendations

- Temporary storage of equipment/materials and parking of vehicles will be on existing areas of hardstanding/bare ground.
- Hedgerow, shrub, tree and grassland loss will be minimised and compensated.
- No storage of materials/equipment to take place under the 'drip-zone' of trees (i.e. under their canopy).
- Keep grassland lawn mown continuously short to ensure the habitat provides less suitable cover and shelter for amphibians and reptiles.
- Ecological supervision of removal of boundary walls and hedgerows and shrubs.
- Firstly the affected vegetation and walls will be searched for amphibians and reptiles. If any common amphibians or reptiles are found, these will be removed carefully with due care and diligence and placed in the dense bracken area on the south eastern site boundary, outside the proposed development works area.
- Trenches will be left with a sloping end/ramp to allow any badgers or other animal that may fall in to escape. Development works excavation holes will be covered overnight. Pipes will be capped off at night to prevent animals entering.
- Bat mitigation for the proposed bungalow works will be provided following the results of the further bat dusk emergence surveys.
- No bat mitigation is required for the proposed garage works.
- A precautionary procedure is included in Appendix 5 to cover the risk of a bat being discovered during building extension/demolition works.

- Exterior lighting will be sensitive to the needs of roosting, foraging and commuting bats in the vicinity.
- Precautionary check for nesting birds if works are carried out during the bird breeding season.

Compensation Recommendations

- Native species-rich hedgerows along north western boundary new wall/fence.
- New native shrub and tree planting.
- Diversify the existing grassland lawn by planting native broadleaved herbaceous species.
- Bat compensation measures will be provided following the results of the further bat dusk emergence surveys of the bungalow.

Enhancement Recommendations

- Install two bat roosting boxes on the bungalow on the completion of the proposed development works.
- Install a house sparrow and a swift nest box on the bungalow on the completion of the proposed development works.
- Install a hedgehog nest box in the base of a new hedgerow.

Further Survey Recommendations

- Two further bat dusk emergence surveys of the bungalow are required.
- Nesting bird check of the buildings, ivy on wall and hedgerow/shrubs by an ecologist if building demolition/extension and vegetation removal works are carried out during the bird breeding season, which runs from March to September, inclusive.

1 INTRODUCTION

1.1 General

- 1.1.1 This report has been prepared by Udall-Martin Associates Ltd. for Ms Michelle Farrier. It provides the details of a Preliminary Ecological Appraisal of an area of land and a bat scoping survey of a residential bungalow and garage, where development works are proposed.
- 1.1.2 The site is at The Bungalow on Joys Green Road in Lydbrook, Gloucestershire, GL17 9SX (National Grid Reference SO 604163).
- 1.1.3 The proposed development works involve the following: (see Figures 1 to 4, Appendix 1).
- A two-storey extension (with roof terrace) to the existing residential bungalow.
 - The demolition of an existing garage and construction of a new replacement garage.
 - The creation of further car parking.
 - The removal of the existing breezeblock wall on the north western site boundary (alongside Joy Greens Road) and construction of a replacement boundary stone wall.
 - To build up the existing stone section of wall on the north western site boundary, to the height of the neighbours' adjoining wall.
 - Installation of new fencing along the wall on the north western site boundary.
 - The boundary wall works will involve the removal of three short sections of garden hedgerow and a limited area of dense bramble scrub.
 - The removal of the existing pedestrian access onto the site.
 - The creation of a garden terrace at the front of the bungalow.
- 1.1.4 The brief was to assess the existing ecological value of the site, to identify potential ecological issues (constraints and opportunities) associated with the proposed development works and make recommendations for general mitigation, compensation, enhancement and further surveys as appropriate.
- 1.1.5 To meet the requirements of the brief, a Preliminary Ecological Appraisal (PEA) (comprising a desk study, an Extended Phase-1 habitat survey of the site and a bat scoping survey of the residential bungalow and garage on the site), was carried out by a suitably qualified and licensed bat ecologist and an ecologist.
- 1.1.6 Our ecology reports follow best practice guidelines as stated by Chartered Institute of Ecology and Environmental Management (CIEEM 2017 and CIEEM 2019) and The British Standards Institute (BSI 2013).

- 1.1.7 Every effort has been made to provide a preliminary ecological appraisal (including for roosting bats) for the site; however, the site visit has provided an assessment of the site at a limited point in time and that the natural environment is unpredictable and changeable. Therefore, limited site visit investigations cannot ensure complete assessment and prediction of the natural environment.
- 1.1.8 Please note a specific search for highly invasive plants as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) has not been carried out and only incidental observations are noted (if found to be present on the site). In particular, during the winter months and in areas of dense scrub vegetation, plants are not as readily observable and therefore, it is possible during such times/site conditions plants could be missed (if a specific search was not part of the brief).

1.2 Bat Legislation

- 1.2.1 All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under The Conservation of Habitats and Species Regulations 2017 (as amended). This makes it an offence to kill, injure or disturb a bat and to destroy any place used for rest or shelter by a bat.
- 1.2.2 Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.
- 1.2.3 Licences in respect of European Protected Species affected by development can be granted under Section 53(3) (e) of The Conservation of Habitats and Species Regulations 2017 (as amended), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.
- 1.2.4 Under this legislation licences can only be issued if Natural England are satisfied that:
- There is no satisfactory alternative and
 - The action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.
- 1.2.5 Natural England aim to process licence applications within 30 working days of receipt.

2 SITE DESCRIPTION

- 2.1 Photographs of the site are provided in Appendix 2. The site is small and comprises a residential dwelling (bungalow) and a separate garage, with areas of bare ground, hardstanding, grassland lawn and hedgerows and walls on site boundaries.
- 2.2 The site slopes reasonably steeply from a flat area on the south eastern site boundary down to the north western site boundary (road side). There was bare ground on the south western side of the site, where vegetation had been cleared, with some stored items and piles of soil (including plastic sheeting covering the ground).
- 2.3 The site is situated within a village in a semi-rural location, with residential properties (with gardens) in the vicinity and woodland in the close vicinity to the south east.

3 METHODOLOGY

3.1 Baseline Ecological Conditions

- 3.1.1 The ecological baseline was established through desk study and site surveys (see below).

3.2 Desk Study

- 3.2.1 Gloucestershire Centre for Environmental Records (GCER) was consulted to provide locations and details of ecological information for the site and to a study area distance of 2km around it. The following information was requested:
- designated nature conservation sites (statutory and non-statutory);
 - previous records of protected and/or notable species;
- 3.2.2 The following websites were also reviewed:
- www.magic.gov.uk (the Multi-Agency Geographic Information website for maps of statutory designated nature conservation sites);
 - www.naturalengland.org.uk (for information on statutory designated nature conservation sites) and
 - www.nbn.org.uk (National Biodiversity Network website for protected species distribution).

3.3 Site Surveys

3.3.1 Survey Area

- a) The Extended Phase-1 habitat survey area is shown in Figure 5, Appendix 1.
- b) The bat scoping survey was carried out at the residential bungalow and garage on the site (see Figure 5, Appendix 1).

3.3.2 Survey Methodology

- a) Extended Phase-1 Habitat Survey
 - i) An Extended Phase-1 habitat survey of the site was carried out following the standard methodology (IEA 1995, JNCC 2010, CIEEM 2013, 2017 and 2019). This involved systematically walking over the site and classifying each parcel of land on the basis of vegetation into one of approximately 90 habitat types (JNCC 2010). Notes were made on the structure and composition of habitats.
 - ii) Any invasive non-native species such as Japanese knotweed (*Fallopia japonica*) observed were also noted (if found to be present).
 - iii) Target notes were used to record any habitats or features of particular interest and any sightings, signs or evidence of protected or notable faunal species or any potential habitat for such species, as detailed below:
 - o The suitability of habitats was assessed for amphibians (including great crested newt *Triturus cristatus*);
 - o The suitability of habitats was assessed for badger (*Meles meles*) and any evidence of badger including setts, dung pits/latrines, badger paths, hairs, bedding, footprints and scratching trees/shrubs was noted;
 - o Trees with features suitable for roosting bats were noted, such as hollows, cracks and cavities within trunks and branches (e.g. old woodpecker holes), crevices behind loose bark and ivy growth. Landscape features such as hedgerows, trees and shrubs were assessed for their potential suitability for bat foraging and commuting;
 - o The suitability of habitats was assessed for hazel dormouse (*Muscardinus avellanarius*);
 - o The suitability of habitats was assessed for nesting birds and

- The suitability of habitats was assessed for reptiles.
- b) Bat Scoping Survey
 - i) A bat scoping survey was carried out of the residential bungalow and garage on the site. This was carried out by a Natural England licensed bat ecologist. The loft void of the bungalow and the interiors of both buildings were searched to locate evidence of current or past bat roosts, in the form of bats, droppings, feeding remains, urine and fur staining, scratch marks, absence of cobwebs, surfaces worn smooth by the presence of bats, sounds emitted by bats audible to the human ear or sounds produced by their movement and smell of bats.
 - ii) The external areas of the buildings were assessed for features which may provide potential bat roosting habitat, such as missing and slipped roof tiles, raised lead flashing, missing mortar and gaps in soffits etc.
 - iii) Equipment utilised to assist in this survey included a powerful torch, ladders, a camera and binoculars.
 - iv) A bat scoping survey of buildings can be carried out at any time of year.
 - v) Landscape features such as trees, shrubs and hedgerows were assessed for their potential suitability for foraging and commuting bats.

3.3.3 Survey Details

- a) Extended Phase-1 Habitat Survey
 - i) Ecologist Susie Udall MSc MCIEEM CEnv carried out the Extended Phase-1 habitat survey of the site on 19th June 2023.
 - ii) The survey details are provided in Table 1 overleaf.
- b) Bat Scoping Survey
 - i) Natural England licensed bat ecologist Dwayne Martin (licence number 2017-27670-CLS-CLS) carried out the bat scoping survey of the residential bungalow and garage on the site on 19th June 2023.
 - ii) The survey details are provided in Table 1 overleaf.

Visit Date	Start Time	Weather Conditions (at start)	Finish Time	Weather Conditions (at finish)
19/06/2023	13.00pm	Dry, hot, sunny and still	14.15pm	Dry, hot, sunny and still

Table 1: Visit Schedule and Weather Conditions during the Surveys

3.3.4 Survey Limitations

- a) The ideal time to carry out an Extended Phase-1 habitat survey is during the plant growing season (i.e. April to September, inclusive) and this is also when most animals are active. Therefore, there were no timing constraints for this survey.
- b) It should be noted that a single visit to a site at any time of year is likely to miss a proportion of the plant species present.
- c) Only a brief assessment of the site was made and no systematic surveys to establish the presence/absence of protected species were undertaken (apart from roosting bats in the buildings). As such, a lack of evidence of a protected species does not necessarily indicate an absence of the species.

3.4 Baseline Evaluation Criteria

- 3.4.1 Based upon the desk study and site surveys, an ecological evaluation of the site was undertaken using a combination of evaluation criteria for habitats and species, although the general framework follows that provided by CIEEM (CIEEM 2019) (see Table 2 overleaf).
- 3.4.2 Where relevant the evaluation was made with reference to the statutory protection afforded to species and habitats.
- 3.4.3 Legal protection does not always correspond to conservation value. Some species (e.g. badger) are protected for reasons of animal welfare rather than conservation. Others are of national conservation value but are not protected by law (e.g. some Red Data Book species and UK BAP species).

Geographic Scale	Example of Ecological Feature
International (European)	An internationally designated site, e.g. Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar Site. Regularly occurring populations of internationally important species.
National	Site of national importance, e.g. Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR). Regularly occurring populations of nationally important species.
Regional	Non-statutory site, e.g. Local Wildlife Site (LWS), Special Wildlife Site (SWS), Key Wildlife Site (KWS). Site supporting a regionally significant area of priority habitat and/or regionally significant population of legally protected/priority species.
Metropolitan, County, Vice-county or Other Local Authority-Wide Area	Non-statutory site, e.g. Local Wildlife Site (LWS), Special Wildlife Site (SWS), Key Wildlife Site (KWS), ancient woodland. Site supporting priority habitats, priority species and/or legally protected species of significance for the county.
Local	Habitats which enhance the local habitat resource, e.g. old species-rich hedgerow, deciduous woodland, pond, small areas of priority habitat or areas supporting small populations of legally protected/priority species which are not rare within the county, region or nationally.
Site	Habitats of limited ecological importance, e.g. scattered trees, hedgerows, woodland plantations, small areas of non-priority habitats that are of value for wildlife. Species of limited ecological importance.
Negligible	Hardstanding, bare ground, built environment and other areas with negligible biodiversity value, including for priority and legally protected species.

Table 2. Framework for Assessing the Ecological Value of Features

4 BASELINE ECOLOGICAL CONDITIONS

4.1 Desk Study¹

4.1.1 Designated Nature Conservation Sites

a) Statutory Sites

- i) There are no statutory designated nature conservation sites (e.g. Ramsar, Special Protection Area, SPA, Special Area of Conservation, SAC or Site of Special Scientific Interest, SSSI) within the survey site; however, there is one SAC and one SSSI within the 2km study area. These sites are detailed below.
- ii) A map showing the location of the statutory sites is shown in Appendix 3.

Statutory Sites within 2km of the Survey Site

The River Wye SAC/SSSI: Located approximately 745m to the north west of the survey site. Reason for designation, "...the River Wye...represents a large, linear ecosystem which acts as an important wildlife corridor, an essential migration route, and a key breeding area for many nationally and internationally important species..."

b) Non-statutory Sites

- i) There are no non-statutory designated nature conservation sites (i.e. Local Wildlife Site, LWS) within the survey site; however, there are 10 LWS within the 2km study area. Those sites are detailed below and overleaf.
- ii) There are also two Regionally Important Geological Sites (RIGs) within the 2km study, the closest is Lower Lydbrook Quarry RIGS, approximately 768m to the west of the survey site.
- iii) A map showing the locations of the non-statutory sites is shown in Appendix 3.

LWS within 2km of the Survey Site

Hangerberry Hill LWS (Ref: SO51/010): Located approximately 665m to the south west of the survey site. Site register states, "Ancient semi-natural broad-leaved woodland site larger than 2 ha."

¹ The desk study data map is provided in Appendix 3. Full desk study data can be provided on request.

Serridge Inclosure LWS (Ref: SO61/072): Located approximately 1,917m to the south east of the survey site. Site register states, "Ancient semi-natural broad-leaved woodland site larger than 2 ha."

Ferry Wood LWS (Ref: SO61/045): Located approximately 520m to the north west of the survey site. Site register states, "Ancient semi-natural broad-leaved woodland."

Cherry Orchard Farm LWS (Ref: SO51/027): Located approximately 548m to the north west of the survey site. Site register states, "Semi-natural grassland with vascular plant interest."

Glasg Farm LWS (Ref: SO61/018): Located approximately 875m to the north east of the survey site. Site register states, "Semi-natural grassland with vascular plant interest."

Lydbrook School Meadow LWS (Ref: SO61/083): Located approximately 984m to the south west of the survey site. Site register states, "Semi-natural grassland."

Tumpshill Grove LWS (Ref: SO51/019): Located approximately 1,480m to the north west of the survey site. Site register states, "Ancient semi-natural broad-leaved woodland site larger than 2 ha with plant interest."

Littlehough Wood LWS (Ref: SO61/092): Located approximately 1,015m to the south west of the survey site. Site register states, "Wet woodland with mammal interest (Common dormouse)."

Lord's Grove & Great Collins Grove LWS (Ref: SO51/033): Located approximately 1,995m to the north west of the survey site. Site register states, "Ancient semi-natural broad-leaved woodland site larger than 2 ha."

Millway & Pope's Grove LWS (Ref: SO51/012): Located approximately 1,559m from the survey site. Site register states, "Ancient semi-natural broad-leaved woodland site larger than 2 ha."

4.1.2 Protected/notable Floral Species

- a) There are no previous records of protected/notable higher or lower plant species within the survey site; however there are such records within the 2km study area (see overleaf).
- b) Protected species legislation details are provided in Appendix 4.
- c) The notable fungi species are listed on the Red List of Near Threatened Species or UK Priority Species.

Protected Higher Floral Species within the 2km Study Area

Bluebell (*Hyacinthoides non-scriptus*): Three records from 2015 and 2016, from the wider vicinity.

Notable Lower Plant Species within the 2km Study Area

Several fungi species: From 2014 to 2016, from the wider vicinity.

4.1.3 Protected/notable Faunal Species

- a) There are no previous records of protected or notable faunal species within the survey site; however, there are such records within the 2km study area (see below and overleaf). Also, there is a record for brown long-eared bat (*Plecotus auritus*), common pipistrelle bat (*Pipistrellus pipistrellus*), soprano pipistrelle bat (*P. pygmaeus*), lesser horseshoe bat (*Rhinolophus hipposideros*), noctule bat (*Nyctalus noctula*) and unidentified myotis bat species, from the same grid reference as the survey site (i.e. SO 604163); however, it is not known where exactly the records are from.
- b) Protected species legislation details are provided in Appendix 4.
- c) The notable species are listed as Priority Species on the national Biodiversity Action Plan (BAP) and/or county BAP or the RSPBs Red and Amber Lists of Birds of Conservation Concern (Eaton et al. 2021) or Red List Near Threatened Species.

Protected Faunal Species within the 2km Study Area

Amphibians:

Common toad (*Bufo bufo*): Two records from 2021, approximately 310m to the north west of the site.

Smooth newt (*Lissotriton vulgaris*): Two records from 2014, approximately 557m to the south west of the site.

Birds:

Several Wildlife and Countryside Act 1981 (as amended) Schedule 1 bird species including kingfisher (*Alcedo atthis*), goshawk (*Accipiter gentilis*), red kite (*Milvus milvus*), fieldfare (*Turdus pilaris*) and redwing (*T. iliacus*): Records from 2013 to 2021, from the wider vicinity.

Mammals:

Badger: Four records from 2014 to 2021, closest record is approximately 656m from the site.

Beaver (*Castor fiber*): Four records from 2018 and 2020, closest is approximately 1,360m to the south east of the site.

Otter (*Lutra lutra*): Three records from 2015 to 2019, closest is approximately 700m to the north west of the site.

Brown long-eared bat: Five records from 2014 to 2018, closest is from the same grid reference as the survey site.

Common pipistrelle bat: Thirty-nine records from 2014 to 2018, closest is from the same grid reference as the survey site.

Daubenton's bat (*Myotis daubentonii*): Three records from 2018 and 2020, closest is approximately 1,400m to the south east of the site.

Leisler's bat (*Nyctalus leisleri*): Two records from 2018, closest is approximately 1,370m to the south east of the site.

Lesser horseshoe bat: Seven records from 2014 to 2018, closest is from the same grid reference as the survey site.

Noctule bat: Five records from 2015 to 2020, closest is from the same grid reference as the survey site.

Soprano pipistrelle bat: Twenty-three records from 2014 to 2020, closest is from the same grid reference as the survey site.

Unidentified bat (*Chiroptera* sp.): Two records from 2018, approximately 650m to the east of the site.

Unidentified bat (*Myotis* sp.): Five records from 2014 to 2020, closest is from the same grid reference as the survey site.

Unidentified bat (*Nyctalus* sp.): One record from 2014, approximately 600m to the south west of the site.

Western barbastelle bat (*Barbastella barbastellus*): Nine records from 2018, closest is approximately 1,400m to the south east of the site.

Whiskered/Brandt's bat (*Myotis mystacinus/brandtii*): Eleven records from 2018, closest is approximately 1,360m to the south east of the site.

Reptiles:

Common lizard (*Zootoca vivipara*): One record from 2015, approximately 1,388m to the south east of the site.

Grass snake (*Natrix helvetica*): One record from 2014, approximately 557m to the south west of the site.

Slow-worm (*Anguis fragilis*): Three records from 2019 and 2021, closest is approximately 310m to the north west of the site.

Notable Faunal Species within the 2km Study Area

Birds:

Numerous bird species including dunnock (*Prunella modularis*), house martin (*Delichon urbicum*), house sparrow (*Passer domesticus*), song thrush (*Turdus philomelos*), swift (*Apus apus*) and starling (*Sturnus vulgaris*): Records from 2013 to 2021, for the close and wider vicinity.

Invertebrates:

Several moth and dragonfly species: Records from 2014 to 2021, from the wider vicinity.

Mammals:

Hedgehog (*Erinaceus europaeus*) and pine marten (*Martes martes*): Several records from 2015 to 2021, from the wider vicinity.

4.2 Site Surveys

4.2.1 Habitat Types

- a) The following Phase-1 habitat types were recorded on the site:
- Bare ground
 - Building
 - Dense bracken
 - Dense scrub
 - Hardstanding
 - Introduced shrub
 - Poor semi-improved grassland
 - Scattered broadleaved tree
 - Scattered coniferous tree
 - Scattered scrub
 - Species-poor intact hedgerow
 - Tall ruderal
 - Wall
- b) The distribution and extent of the Phase-1 habitat types recorded on the site are shown in Figure 5, Appendix 1. Habitat descriptions are provided below and overleaf.
- c) In the text species are referred to using their English names and their scientific names. Nomenclature follows The National Biodiversity Network Species Dictionary.

4.2.2 Habitat Descriptions

- a) Bare Ground
- i) Bare soil/disturbed ground occurs on the south western side of the site, from the flat area on the north eastern side of the site near the bungalow down a slope to the south western site boundary, where vegetation had been cleared (see photographs 17, 18 and 19, Appendix 2). There was a mound of earth near the boundary hedgerow.
- ii) There was some stored items and piles of soil, with limited scattered herbaceous vegetation such as prickly sow-thistle (*Sonchus asper*) and scarlet pimpernel (*Anagallis arvensis*).

b) Building

- i) The residential dwelling is a single-storey pebble dashed bungalow, with porch, a boiler room/store to the rear, a pitched overlapping tiled roof and a small area of flat bituminous roof (see photographs 1, 2 and 3, Appendix 2). It has plastic and timber framed glazed windows and doors and plastic soffits/fascias. There is a roof void which is part boarded, insulated, bituminous lined (torn in places) and was found to be very cobwebbed at the ridge.
- ii) The garage is a single-storey, pebble dashed building, with a pitched asbestos roof and a timber floor (see photographs 14, 15 and 16, Appendix 2). There is dense ivy growth on the garage.

c) Dense Bracken

- i) A limited area of dense bracken occurs on the south eastern site boundary, above a wall (see photograph 20, Appendix 2). Other species recorded on the raised bank include common nettle (*Urtica dioica*), prickly sow-thistle, foxglove (*Digitalis purpurea*) and herb-robert (*Geranium robertianum*).

d) Dense Scrub

- i) A limited area of dense bramble (*Rubus fruticosus* agg.) scrub occurs between the boundary wall and the hedgerow near the western corner of the site (see photographs 21, 22 and 23, Appendix 2). Other species recorded include common nettle and ash (*Fraxinus excelsior*) saplings.

e) Hardstanding

- i) A driveway leads from the vehicular access entrance (on Joy Greens Road) to the garage on the site (see photograph *, Appendix 2).
- ii) There is a concrete pedestrian path and steps from the north western site boundary up to the bungalow, with concrete slabs around the bungalow and gravel in a seating area near the bungalow and within the grassland lawn.

f) Introduced Shrub

- i) There is a butterfly bush (*Buddleia davidii*) in the eastern corner of the site, a very limited border of mature shrubs near a hedgerow on the site and rose (*Rosa* spp.) bushes near the bungalow.

g) Poor Semi-improved Grassland

- i) This type of grassland occurs in the lawn areas on the site (see photographs 24, 25, 26 and 27, Appendix 2). At the time of the survey the grassland sward was reasonably long (but had been mown previously this season). Grass species include red fescue (*Festuca rubra*), bent (*Agrostis* sp.), Yorkshire-fog (*Holcus lanatus*), rough meadow-grass (*Poa trivialis*) and false oat-grass (*Arrhenatherum elatius*). Broadleaved herbaceous species including creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale* agg.), ribwort plantain (*Plantago lanceolata*), common cat's-ear (*Hypochoeris radicata*), selfheal (*Prunella vulgaris*) and yarrow (*Achillea millefolium*).

h) Scattered Broadleaved Tree

- i) A young damson (*Prunus* sp.) tree occurs near the garage.

i) Scattered Coniferous Tree

- i) A young Cypress (*Cupressus* sp.) tree occurs near the bungalow.

j) Scattered Scrub

- i) A mature elder (*Sambucus nigra*) shrub occurs in the eastern corner of the site and scattered bramble near the boundary hedgerows.

k) Species-poor Intact Hedgerow

- i) There are short sections of garden hedgerows either side of the pedestrian access path on the north western site boundary, including two slightly separate hedgerows on the northern side of the path.

- ii) The main hedgerows either side of the path are trimmed to approximately 2m high and 1m wide and comprise Cypress (*Cupressus* spp.), elder, bramble and limited dogwood (*Cornus sanguinea*) (see photographs 25, 26 and 27, Appendix 2). Ash saplings were also recorded. Ground flora species include prickly sow-thistle, broadleaved dock (*Rumex obtusifolius*), cleavers (*Galium aparine*) and ivy (*Hedera helix*).

- iii) There is also a shorter hedgerow alongside the stone wall to the north of the path, which is 1m high and 0.75m wide comprising dogwood, bramble, hawthorn (*Crataegus monogyna*) and butterfly bush. Other species include honeysuckle (*Lonicera* sp.), clematis (*Clematis* sp.) and common nettle.

- l) Tall Ruderal
 - i) A limited patch of tall ruderal vegetation occurs within the grassland lawn (see photograph 24, Appendix 2). It is species-poor and dominated by broadleaved dock, common ragwort (*Senecio jacobaea*) and prickly sow-thistle, with fox-and-cubs (*Pilosella aurantiaca*) and cock's-foot (*Dactylis glomerata*).
- m) Wall
 - i) Stone walls occur on the site boundaries, with also a section of breeze block wall near the roadside (see photographs 28 and 29, Appendix 2). The walls contain some gaps between stones.
- n) Adjacent Habitats
 - i) The site is situated within a village in a semi-rural location, with residential properties (with gardens) in the vicinity and woodland in the close vicinity to the south east

4.2.3 Target Notes

- 1) Small pile of rocks/stones/rubble near the bungalow, providing limited potential cover and sheltering habitat for amphibians (see photograph 30, Appendix 2).
- 2) Small pile of brash/hedge cuttings near the wall on the roadside, providing limited potential cover and sheltering habitat for amphibians and reptiles (see photograph 23, Appendix 2).
- 3) Dense ivy cover on the garage, providing potential bird nesting habitat (see photographs 14 and 15, Appendix 2).
- 4) Dense ivy cover on the stone wall adjoining the garage, providing potential bird nesting habitat (see photographs 15 and 31, Appendix 2).

4.2.4 Protected/notable Species

- a) Plants
 - i) No highly invasive species as listed on the Wildlife and Countryside Act 1981 (as amended) Schedule 9 were observed on the site (although a specific search was not carried out).

b) Amphibians

- i) There are no ponds on the site; however there could be garden ponds in the vicinity.
- ii) The grassland (when the sward is longer), bases of hedgerows/scrub and gaps in boundary walls on the site provide some potential cover and sheltering habitat for amphibians.
- iii) Also, the pile of rocks and brash/hedge cuttings provide some limited potential amphibian cover and sheltering opportunities (see target notes 1 and 2 in Section 4.2.3 above and in Figure 5, Appendix 1 and photographs 23 and 30, Appendix 2).

c) Badger

- i) No evidence of badger was found on the site (although a specific search was not carried out). The limited hedgerows and scrub on the site provide limited/poor potential badger sett building habitat.
- ii) The grassland on the site provides some limited potential badger foraging habitat.

d) Bats

- i) Two hundred plus fresh bat droppings of a size and shape characteristic of those produced by pipistrelle bats (*Pipistrellus* spp.) were found in the boiler room/store to the rear of the bungalow, and a further two fresh bat droppings (likely from a pipistrelle bat) were found on an outside table close to the bungalow (see Figure 6, Appendix 1 and photographs 4 to 8, Appendix 2).
- ii) No evidence of bats was found within or on the exterior of the garage.
- iii) Features were identified on the bungalow providing potential bat roosting habitat; these are listed below and shown in Figure 6, Appendix 1 and photographs 9 to 13, Appendix 2:
 - 1) Gap into porch roof.
 - 2) Gaps under roof tiles.
 - 3) Gaps under ridge tiles.
 - 4) Gaps under bituminous felt on flat roof section.
 - 5) Vent holes in wall.
- iv) The limited sections of hedgerow (mostly comprised of Cypress) on the site provide limited potential foraging and commuting habitat for bats, with the woodland further

beyond to the south east providing good potential bat foraging/commuting opportunities for bats.

e) Birds

i) No bird nests were observed on the bungalow or garage.

ii) The buildings, hedgerows, shrubs and tree on the site provide some potential bird nesting habitat.

iii) The dense ivy growth on the garage and adjoining boundary stone wall provide potential bird nesting habitat (see target notes 3 and 4 in Section 4.2.3 above and in Figure 5, Appendix 1 and photographs 14, 15 and 31, Appendix 2).

f) Hazel Dormouse

i) The limited hedgerows and scrub on the site provide poor potential habitat for hazel dormouse.

g) Reptiles

i) The grassland (when the sward is longer), bases of hedgerows/scrub and gaps in boundary walls on the site provide some limited potential cover and sheltering habitat for reptiles.

ii) Also, the pile of brash/hedge cuttings provide some limited potential reptile cover and sheltering opportunities (see target note 2 in Section 4.2.3 above and in Figure 5, Appendix 1 and photograph 23, Appendix 2).

5 ECOLOGICAL EVALUATION

5.1 Designated Nature Conservation Sites

5.1.1 Statutory Sites

a) There are no statutory sites on the survey site; however there are two statutory sites (from the same location) within the 2km study area, being 745m away from the survey site.

- b) Due to the distance from the survey site and the nature of the proposed development works it is considered there should be no adverse impacts to such statutory sites in the wider vicinity.
- c) No further surveys or mitigation are recommended for these statutory sites.

5.1.2 Non-statutory Sites

- a) There are no non-statutory sites on the survey site; however, there are ten LWS within the 2km study area (closest is 520m away from the survey site).
- b) Due to the distances from the survey site and the nature of the proposed development works it is considered there should be no adverse impacts to the LWS in the vicinity.
- c) No further surveys or mitigation are recommended for these non-statutory sites.

5.2 Habitats

- 5.2.1 The ecological evaluation of the habitats on the site is summarised in Table 3 overleaf. The habitats on the site are common, low-grade habitats, considered to be of site/low ecological value.
- 5.2.2 No habitats recorded on the site are listed as Habitats of Principal Biological Importance on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 or as Priority Habitats on the National BAP or county BAP.
- 5.2.3 General mitigation, compensation and enhancement measures are recommended to avoid/minimise adverse impacts (see Sections 6.2, 6.3 and 6.4 below).

Site Value	
Building	Bungalow contains bat evidence and bungalow and garage provide some potential nesting bird habitat.
Dense bracken	Limited in extent and species-poor, provides limited potential cover and sheltering habitat for common amphibians and reptiles.
Dense scrub	Limited in extent and species-poor, provides limited potential cover and sheltering habitat for common amphibians and reptiles.
Introduced shrub	Limited in extent and non-native species. Mature shrubs provide some potential nesting bird opportunities.
Poor semi-improved grassland	Limited in extent and species-poor. Provides some limited/poor potential cover and sheltering habitat for amphibians and reptiles (particularly when the sward is longer).
Scattered broadleaved tree	Young specimen. Provides limited potential bird nesting habitat.
Scattered coniferous tree	Very young specimen. Provides poor potential bird nesting habitat.
Scattered scrub	Limited in extent. Provides some limited potential bird nesting habitat.
Species-poor intact hedgerow	Limited in extent, species-poor and mainly composed of a non-native species (with some limited native shrubs). They would not qualify as 'important' (using ecological criteria) under the Hedgerow Regulations (1997). However, all hedgerows are of some ecological value and provide ecological 'corridors' along which plants and animals can disperse. The hedgerows provide bird nesting habitat and limited potential bat foraging/commuting habitat and common amphibian and reptile cover and sheltering habitat at the bases.
Tall ruderal	Limited in extent and provides poor/limited potential habitat for faunal species.
Wall	Gaps in walls provide some limited potential sheltering habitat for common amphibians and reptiles.
Negligible	
Bare ground and Hardstanding	Provide poor potential habitat for faunal species.

Table 3. Summary of Ecological Evaluation of the Habitats on the Site

5.3 Protected/notable Species

5.3.1 Floral Species

- a) None of the species recorded during the survey are specifically protected by the Wildlife and Countryside Act (WCA) 1981 (as amended) or considered rare nationally or locally (e.g. Preston et al. 2002). Also, none of the species recorded are listed as Species of Principal Biological Importance on Section 41 of the NERC Act 2006 or as Priority Species listed on the national BAP.
- b) No further plant surveys are recommended.

5.3.2 Faunal Species

a) Amphibians

- i) The habitats present on the site and in the vicinity suggest that the site may be used to only a very limited degree by any local amphibian populations in the vicinity. There is no potential amphibian breeding habitat on the site and the site provides some limited potential amphibian terrestrial habitat.
- ii) There are no previous records for great crested newt (a specially protected amphibian) for the 2km study area. According to Magic Map website there are no ponds within 500m of the site. Due to the nature of the habitats on and surrounding the site, the presence of great crested newt on the site is considered unlikely.
- iii) No further amphibian surveys are required. However, some precautionary best practice measures are recommended for common amphibians (see Section 6.2.2 below).

b) Badger

- i) Four records for badger were revealed within the 2km study area by the desk study, with the closest record being 656m away from the site. It is possible that badgers may use the site/close vicinity for occasional passage and foraging.
- ii) Precautionary mitigation/best practice measures are recommended (see Section 6.2.3 below).

c) Bats

- i) As evidence of bats and features providing potential bat roosting habitat were found on the bungalow, there could be adverse impacts to roosting bats due to the proposed

building extension works. Therefore, to determine the presence/absence of roosting bats/status of any bat roosts in/on the bungalow, two further bat dusk emergence surveys of the bungalow are required (see Section 6.5.1 below). This will determine whether a European Protected Species (EPS) mitigation licence for bats from Natural England is required for the proposed bungalow extension works.

- ii) As no evidence of bats or features providing potential bat roosting habitat were found on/in the garage, then no further bat surveys, bat mitigation or EPS licence for the garage demolition are required.
 - iii) The Bat Survey Guidelines (BCT 2016) state that up to two to three bat surveys are required to satisfactorily address the survey need of a building. A bat scoping survey was carried out (during the optimal bat survey period, i.e. May to August, inclusive) and as the bungalow contains features providing potential bat roosting habitat, two further bat dusk emergence surveys are required for the bungalow and as the garage provides no potential bat roosting habitat no further bat surveys of the garage are required.
 - iv) The hedgerows to be removed mainly comprise of Cypress and are limited in extent and therefore provide more limited potential bat foraging and commuting habitat. We recommend further native species-rich hedgerow planting to compensate for any loss of bat foraging habitat (see Section 6.3.1 below).
 - v) New lighting for the proposed development may cause some adverse impacts to bat foraging and commuting in the vicinity. Therefore, mitigation measures for lighting on the proposed development site are recommended for bats (see Section 6.2.4 below).
- d) Birds
- i) A limited variety of bird species may breed in the building, hedgerows, shrubs, tree and dense ivy (on the garage and boundary wall) on the site. As the garage is to be demolished, bungalow extended and hedgerows/shrubs removed, these works could adversely impact nesting birds.
 - ii) All birds are protected under the WCA 1981 (as amended) whilst breeding. This legislation protects nests, eggs and unfledged young from damage or destruction.
 - iii) Due to the nature of the habitats on and surrounding the site, it is considered unlikely that any nesting birds on the site would be specially protected, i.e. those listed on Schedule 1 of the WCA 1981 (as amended). Such species are additionally protected from disturbance on the nest.

- iv) As the buildings and hedgerow/scrub vegetation provide potential bird nesting habitat, mitigation and a possible nesting bird check are recommended (see Sections 6.2.5 and 6.5.2 below).
- e) Hazel Dormouse
 - i) There are no previous records for hazel dormouse for the 2km study area. The limited hedgerows and scrub on the site provide poor potential habitat for this species. Therefore, it is considered unlikely that dormice are present on the site and there should be no adverse impacts to this species due to the proposed development works.
 - ii) No further surveys or mitigation measures are recommended for hazel dormice.
- f) Reptiles
 - i) There are previous records for three reptile species for the 2km study area, the closest being for slow-worm, approximately 310m from the site.
 - ii) The site provides some limited potential reptile habitat. No further reptile surveys are required. However, some precautionary mitigation/best practice measures are recommended for reptiles to avoid/minimise the risk of harming reptiles (see Section 6.2.2 below).

5.4 Main Potential Ecological Issues

- 5.4.1 The potential ecological constraints associated with the proposed development of the site comprise, (i) loss, damage and disturbance to habitats, (ii) harm and injury to roosting bats due to bungalow extension works, (iii) loss of bat roosts due to bungalow extension works, (iv) potential loss/disturbance of bat foraging/commuting (due to hedgerow loss and new lighting), (v) potential harm to nesting birds, (vi) loss of bird nesting habitat and (vii) limited potential to harm common amphibians and reptiles.
- 5.4.2 Further bat dusk emergence surveys of the bungalow are required (see Section 6.5.1 below).
- 5.4.3 There are ecological opportunities through habitat creation and enhancements for faunal species.
- 5.4.4 A summary is provided in Table 4 overleaf.

Habitat/Species	Potential Ecological Issue
Potential Negative Impacts (Constraints)	
Habitats	Loss, damage, disturbance to habitats. Habitat loss to be kept to an absolute minimum and compensated.
Bats	Potential harm and injury to individual bats and loss of bat roosts due to the bungalow extension works. However, if further bat dusk emergence surveys are carried out and appropriate and proportionate mitigation and compensation implemented, then adverse impacts will be avoided/minimised. Potential adverse impacts to foraging and commuting bats in the vicinity due to habitat loss and any new lighting on the site. However, if appropriate mitigation and compensation measures are implemented then negative impacts should be avoided/minimised.
Nesting birds	Potential harm to nesting birds during building demolition/extension and hedgerow/scrub removal. However, if works are carried out outside the bird breeding season or a nesting bird check is firstly carried out, impacts should be avoided. Habitat loss.
Common amphibians and reptiles	Potential harm and injury to common amphibians and reptiles during hedgerow/scrub/wall removal. However, if best practice measures/ecological supervision are implemented, then adverse impacts should be avoided/minimised.
Potential Positive Impacts (Opportunities)	
Fauna	Bat, bird and hedgehog boxes should be installed.

Table 4. Summary of Main Potential Ecological Issues

6 RECOMMENDATIONS

6.1 Introduction

- 6.1.1 Wherever possible, negative ecological impacts should be avoided. If this is unavoidable then mitigation and compensation measures will be proposed for adverse ecological effects. In addition, it is best practice to seek positive biodiversity benefits through enhancement measures, in particular with regard to Priority Habitats and Species listed on the national and local Biodiversity Action Plans and the NERC Act 2006.

6.1.2 CIEEM (2006) endorses the following principle, recommended by the Royal Town Planning Institute (2000) for optimising the biodiversity outcomes of planning decisions: New Benefits: seek to provide net benefits for biodiversity over and above requirements for mitigation and compensation.

6.1.3 Planning authorities are required to actively seek in development proposals, measures that aim to promote appropriate Priority Habitats and Species listed in the UK Biodiversity Action Plan and treat these as 'material considerations'.

6.1.4 The National Planning Policy Framework states at paragraphs 174d) and 179b), respectively:

"Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."

"Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

6.2 Mitigation Recommendations

6.2.1 Habitats (Mitigation)

- a) Building equipment and materials will be temporarily stored and vehicles parked on existing areas of hardstanding/bare ground at the site.
- b) Hedgerow, shrub and grassland loss (and any tree loss) will be minimised and compensated (see Sections 6.3.1, 6.3.2 and 6.3.3 below).
- c) No storage of materials, equipment or plant will take place under the 'drip-zone' of trees (i.e. under their canopy). Best practice will be followed (i.e. BS5837: 2012 Trees in Relation to Construction) to ensure individual trees are not adversely affected. Root damage will be avoided.

6.2.2 Common Amphibians and Reptiles (Precautionary Mitigation)

- a) The grassland lawn on the site will be continuously regularly mown to keep a short sward to ensure it provides less suitable habitat for amphibians and reptiles.
- b) The removal of the hedgerows, scrub and boundary walls on the north western site boundary will be carried out under the supervision of an ecologist. This is to

avoid/minimise the risk of harming any reptiles (and common amphibians) that may be using the area.

- c) Firstly the affected vegetation and wall will be searched for common amphibians and reptiles by the ecologist. The hedgerows/shrubs and boundary walls to be affected will be carried out carefully by hand and vegetation/stones/breeze blocks checked beneath for any reptiles or common amphibians by the ecologist.
- d) If any common amphibians are found during any site clearance work the animals will be removed with due care and diligence by hand (with gloves) by the ecologist or site worker and placed in the bracken area on the eastern site boundary, outside the development works area.
- e) If reptiles are found, then works will stop immediately in that area and the ecologist will remove the animal with due care and diligence by hand (with gloves) and place in the bracken area on the eastern site boundary, outside the development works area.

6.2.3 Badger (Best Practice)

- a) General best practice measures are that if any trenches dug during works activities are left open over night, they will be left with a sloping end or ramp to allow any badgers or other animal that may fall in to escape.
- b) Development works excavation holes will be covered overnight.
- c) Also, any pipes over 200mm in diameter will be capped off at night to prevent animals entering.

6.2.4 Bats (Mitigation)

- a) Bat mitigation for the proposed bungalow extension will be provided following the completion of the further bat dusk emergence surveys required (see Section 6.5.1 below).
- b) No specific mitigation for roosting bats is required for the proposed demolition of the garage.
- c) As a precaution, there is a procedure to follow should bats be found during building extension/demolition works (see Appendix 5). It is important that all personnel working on the building project should be fully briefed on this procedure. Before any works can proceed to the bungalow, the further bat dusk emergence surveys need to be carried out.

- d) Any new outside/interior lighting will conform to Bat Conservation Trust (BCT) guidelines. Lighting will be sympathetic to the needs of roosting, foraging and commuting bats in the vicinity.
- e) If lighting is required for security, shrouded down lights will be used on exterior walls of the buildings and any other exterior lighting positioned on posts or bollards that are closer to the ground and directed downwards. The lights will be activated by a time sensor with a low movement sensitivity, so as not to be triggered by wildlife.
- f) The following measures are recommended:
 - o All external lighting to be on timer switches, so lights go off after 'X' seconds.
 - o There will be no lighting near trees, shrubs and hedgerows as these are especially important for bat commuting/foraging.
 - o Use high quality infra-red lighting if security cameras are to be installed rather than actual lighting.
 - o As low a Lux level as possible.
- g) All lighting on the development will support the Dark Skies initiative (DEFRA/NPPF Guidance 2013).

6.2.5 Nesting Birds (Precautionary Mitigation)

- a) If building extension/demolition works and hedgerow/shrub/ivy removal works were carried out during the bird breeding survey, then firstly a nesting bird check would need to be carried out by an ecologist (see Section 6.5.2 below).

6.3 Compensation Recommendations

6.3.1 Native Species-rich Hedgerows

- a) We recommend new native species-rich hedgerows are planted along the north western site boundary (alongside the new boundary walls and fencing) and other site boundaries (where practical). They will be planted with a variety of native shrubs, with occasional native trees and native climbers and under-planted with native herbaceous species. A list of suitable species for planting is provided in Appendix 6 (including the Emorsgate EH1 ground flora species).
- b) Once established the new hedgerows on the site will be managed for wildlife by trimming every two years (to approximately 2m high in an 'A' shape), in February, to allow berries to overwinter on the shrubs as a bird feeding resource.

6.3.2 Native Shrubs and Trees

- a) We recommend planting native and some non-native species (those which are also attractive to wildlife) within the garden. A list of suitable species for planting is provided in Appendix 6. It would be desirable to plant native trees, shrubs and climbers that carry seed, fruit and berries as a winter food source for wildlife (see Appendix 6).
- b) Native species tend to be more attractive and beneficial to wildlife than non-native species. They would provide food and nesting sites for birds and nectar for insects. As any landscaping areas are not to be 'wild' as such, species recommended are generally low-growing and not invasive.

6.3.3 Grassland

- a) To compensate for the loss of grassland, we recommend the existing grassland lawn sward is diversified by planting plugs of a variety of native broadleaved herbaceous species. A list of suitable plant species is provided in Appendix 6.

6.3.4 Roosting Bats

- a) Bat compensation for the proposed bungalow extension will be provided following the completion of the further bat dusk emergence surveys required (see Section 6.5.1 below).

6.4 Enhancement Recommendations

6.4.1 Bats

- a) Install two bat roosting boxes on the bungalow (on the new two-storey section) on the completion of the proposed development works. The bat boxes will be positioned at least 3m to 4m above the ground, facing south east.
- b) Bat box details and specifications are provided in Appendix 7.

6.4.2 Nesting Birds

- a) An artificial nest site each for house sparrow and swift will be installed on the bungalow (on the new two-storey section) on the completion of the proposed development works. The nesting boxes will be positioned as high as possible under the eaves on the north west side of the building, avoiding direct sunlight.
- b) Bird box details and specifications are provided in Appendix 7.

6.4.3 Hedgehog

- a) Install a hedgehog box in the base of a new hedgerow. Details and specifications are provided in Appendix 7.

6.5 Further Survey Recommendations

6.5.1 Bats

- a) Two further bat dusk emergence surveys of the bungalow are required to be carried out in the optimal bat survey period (i.e. May to August, inclusive) in 2023. The bat dusk surveys need to be carried out prior to any building extension works commencing.
- b) The bat dusk emergence surveys will involve surveyors surveying the building at dusk using bat detectors to record any bats emerging from/re-entering into features on the building, as well as general bat passes on the site.

6.5.2 Birds

- a) If bungalow extension, garage demolition, ivy removal from the wall adjoining the garage and/or hedgerow/scrub removal are to be carried out during the bird breeding season, i.e. March to September, inclusive, then firstly an ecologist will search the buildings/vegetation for bird nests. This will ensure that no active nests will be affected. If active nests are found then work will have to be delayed in that area until all young have fledged and vacated the nest.

References

Chartered Institute of Ecology and Environmental Management 2013 Guidelines for Preliminary Ecological Appraisal. CIEEM.

Chartered Institute of Ecology and Environmental Management December 2017 Guidelines for Preliminary Ecological Appraisal. CIEEM.

Chartered Institute of Ecology and Environmental Management Version 1.1 Updated September 2019 Guidelines for Ecological Impact Assessment in the UK and Ireland. CIEEM.

Collins, J. (ed.) 2016 Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.

DEFRA/NPPF Guidance 2013: <http://www.darkwightskies.com/wp-content/files/DEFRA - Artificial- Light - in – the – Environment –>

Eaton M A. et al. 2021 Birds of Conservation Concern 5: the population status of birds in the UK, Channel Islands and Isle of Man.

Available at: <https://www.rspb.org.uk/globalassets/downloads/bocc5/bocc5-report.pdf>

Institute of Ecology and Environmental Management 2006 Guidelines for Ecological Impact Assessment. IEEM.

Institute of Environmental Assessment 1995 Guidelines for Baseline Ecological Assessment. Chapman and Hall, London.

JNCC 2010 Handbook for Phase 1 Habitat Survey: a technique for environmental audit. JNCC, Peterborough.

MAGIC Site Check Report. Available: www.magic.gov.uk.

Mitchell-Jones A.J. 2004 Bat Mitigation Guidelines, Jan 2004. English Nature, Peterborough.

Mitchell-Jones A J & McLeish A P 2004 The Bat Worker's Manual, 3rd Edition, English Nature, Peterborough

National Planning Policy Framework (NPPF) July 2021. Department for Communities and Local Government.

Nbn Gateway. Available: www.nbn.org.uk.

Preston, C. D., Pearman, D. A. and Dines, T. D. 2002 New Atlas of the British and Irish Flora. University Press, Oxford.

Royal Town Planning Institute 2000 Planning for Biodiversity.

The British Standards Institution 2013 Biodiversity – Code of Practice for Planning and Development BS 42020:2013. CIEEM.

Appendix 1: Figures

Figure 1: Proposed Bungalow Two-Storey Extension – Elevations



Figure 2: Garage as Existing and Proposed

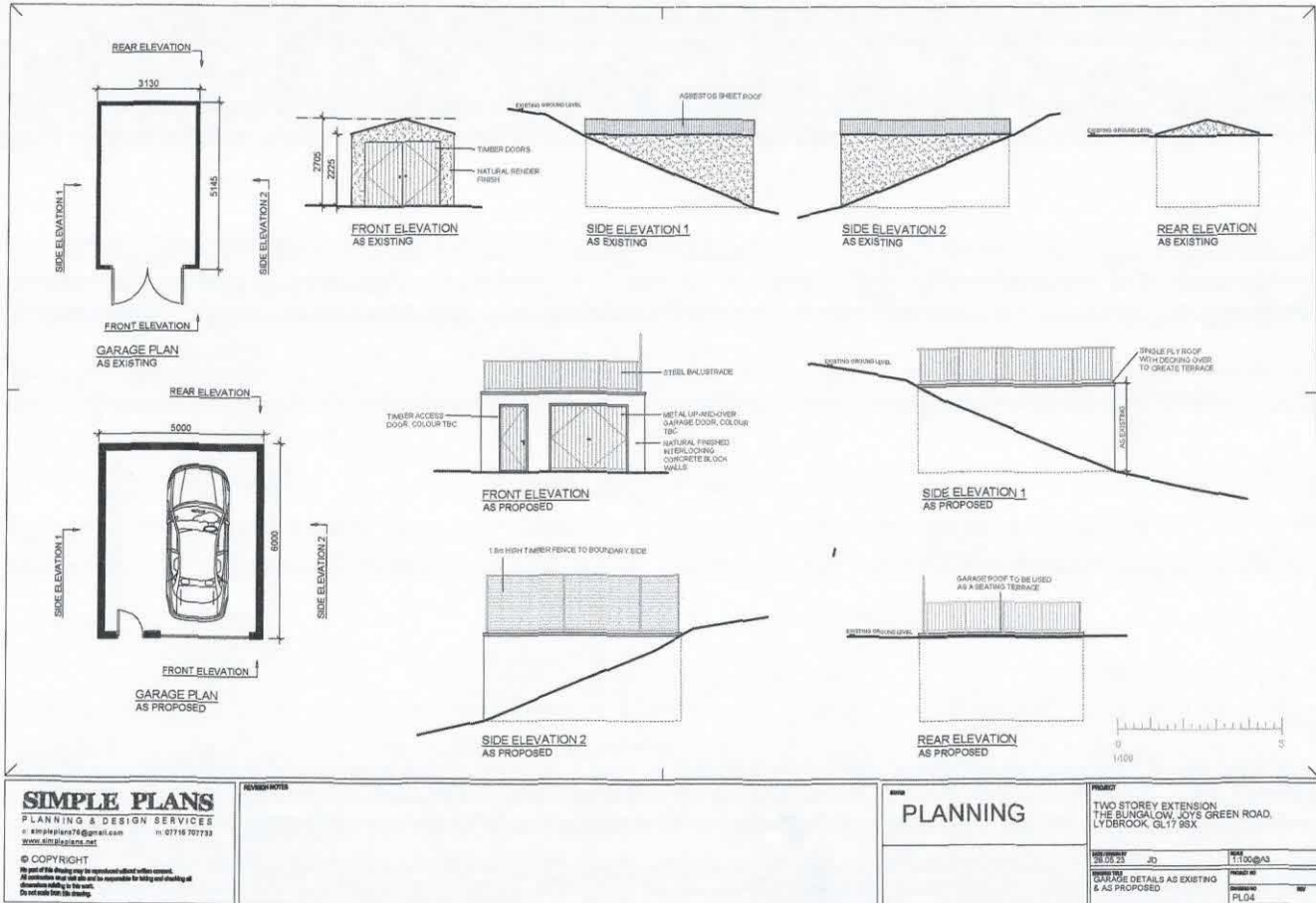


Figure 3: Proposed New Retaining Wall

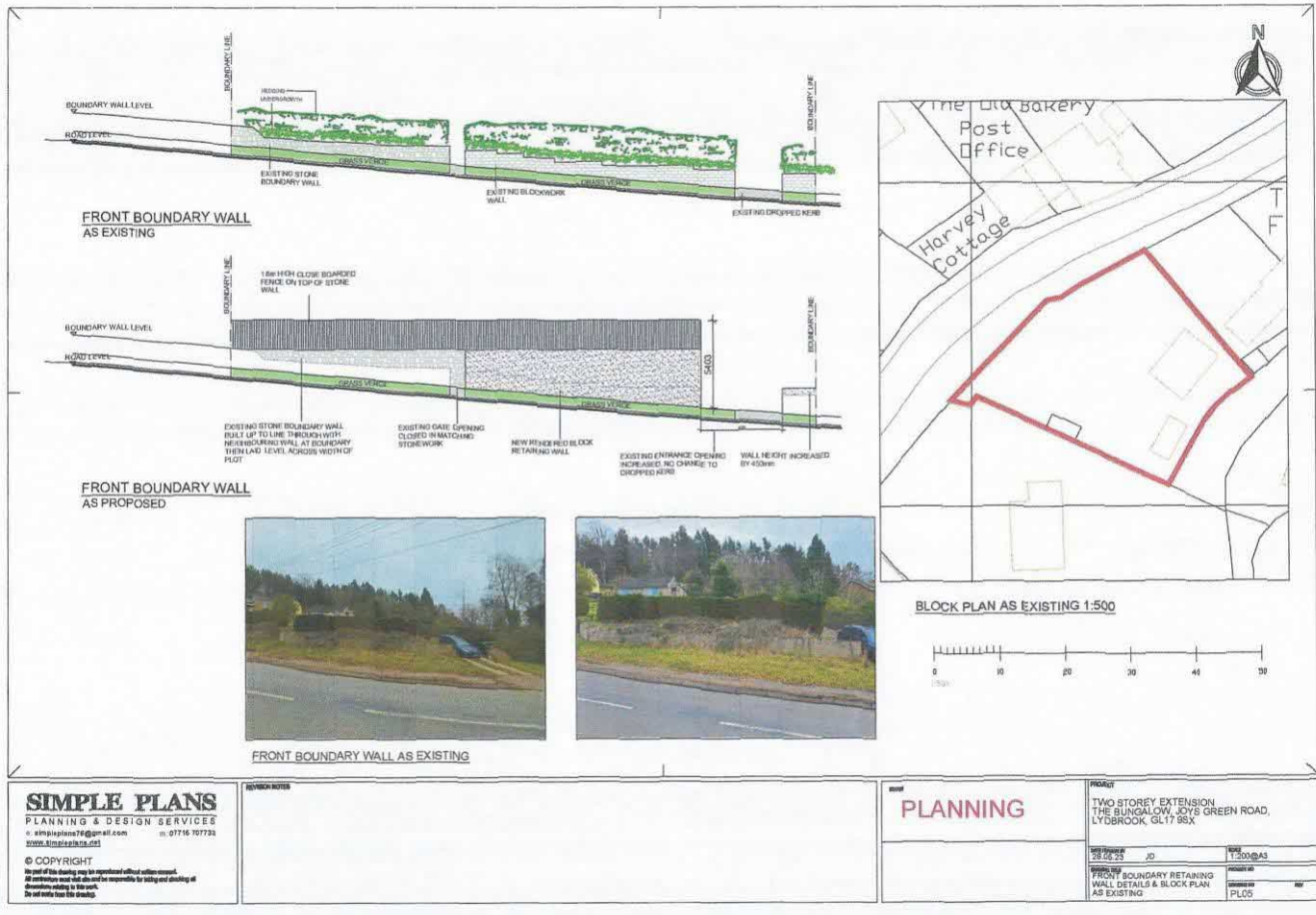


Figure 4: Site Plans – As Existing and Proposed

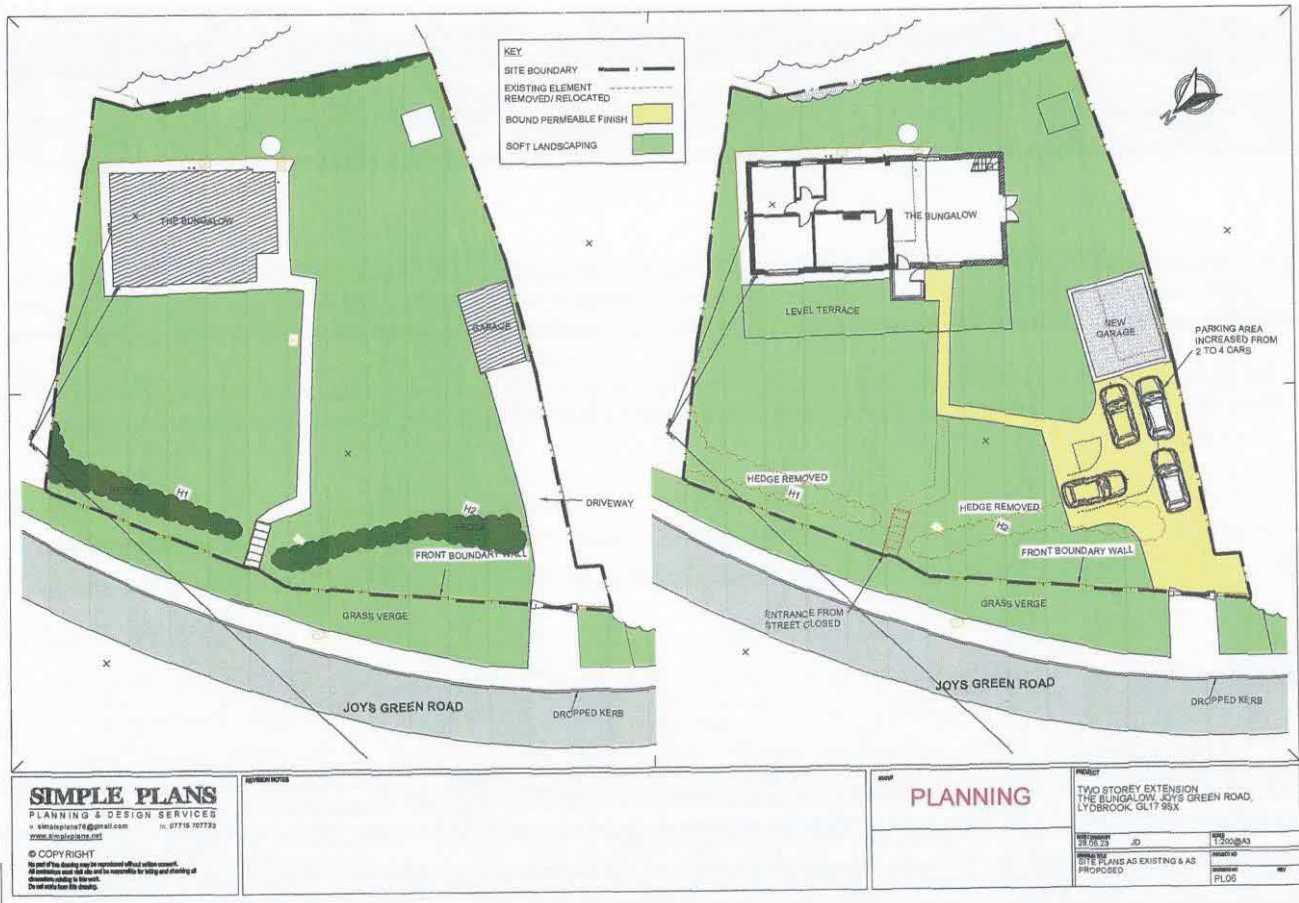


Figure 5: Extended Phase-1 Habitat Survey Area and Survey Results

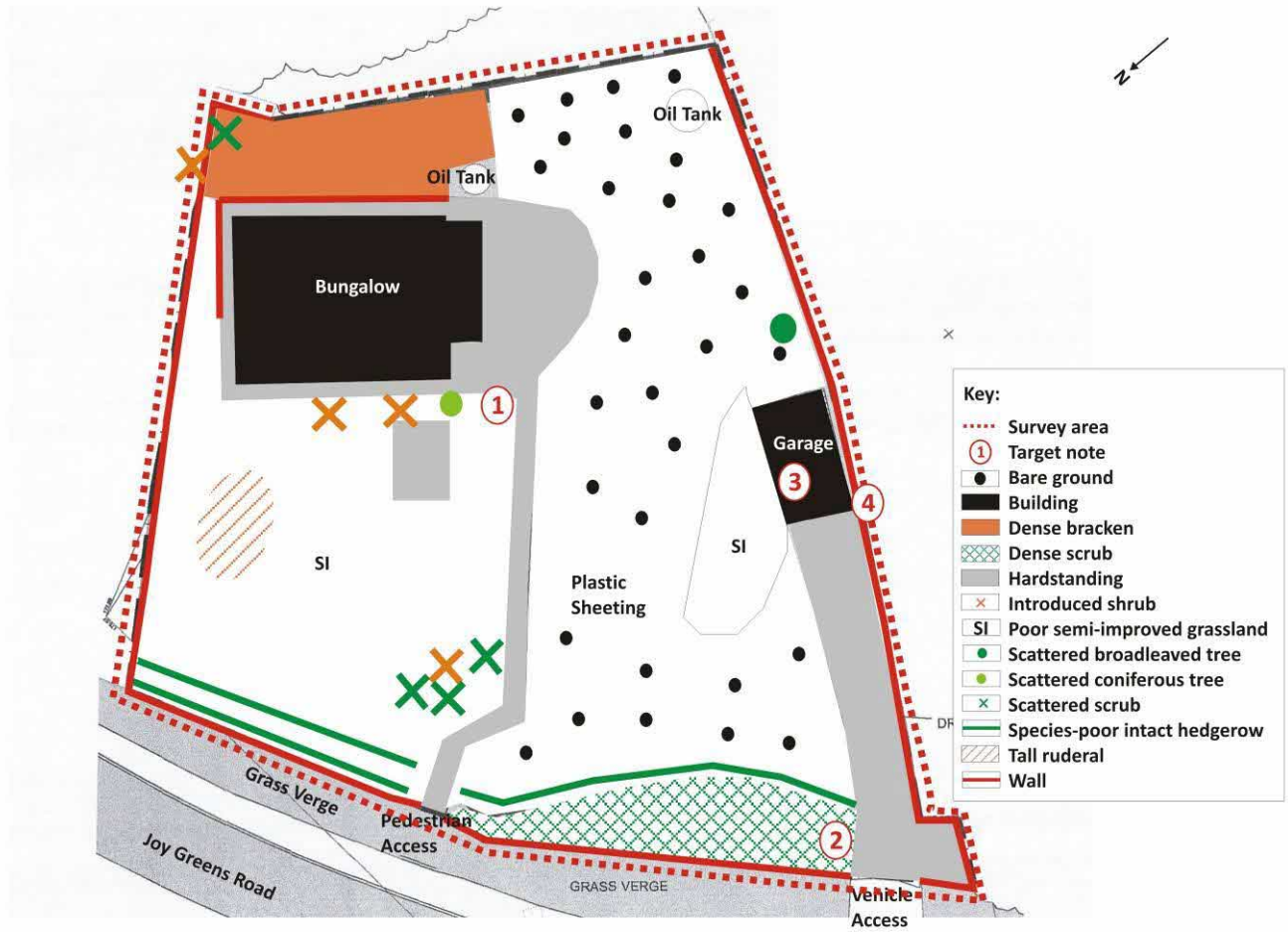
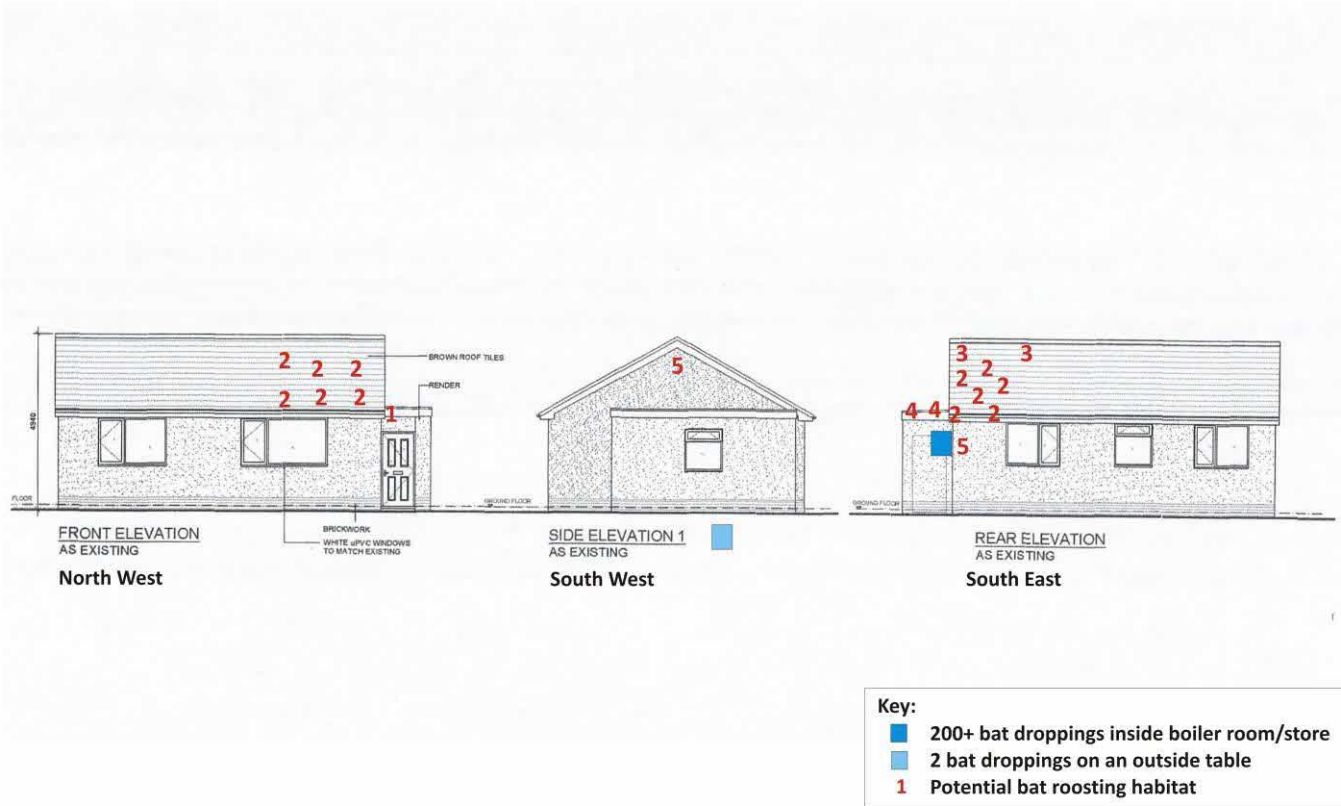


Figure 6: Bat Scoping Survey Results



Appendix 2: Photographs

Bungalow



1. External view of the proposed extension area on the bungalow



2. Roof void



3. Roof void



4. Bat droppings in boiler room



5. Bat droppings in boiler room



6. Bat droppings in boiler room



7. Bat dropping on external table



8. Bat dropping on external table



9. Gap into porch roof



10. Gaps under roof tiles



11. Gaps under roof tiles



12. Gaps under bituminous felt



13. Vent hole in wall

Garage



14. External view



15. External view



16. Interior of garage

Garden



17. Proposed car parking area



18. Area near proposed bungalow extension



19. Proposed bungalow extension area



20. Rear garden boundary (near proposed bungalow extension)



21. Dense bramble scrub on roadside boundary



22. Dense bramble scrub on roadside boundary



23. Dense bramble scrub and brash/hedge cuttings on road side boundary near vehicle access



24. Grassland lawn and hedgerow proposed for removal



25. Pedestrian access and two hedgerows proposed for removal



26. Hedgerow proposed for removal



27. Hedgerow proposed for removal



28. Breeze block wall proposed for removal



29. Stone wall proposed to be built higher



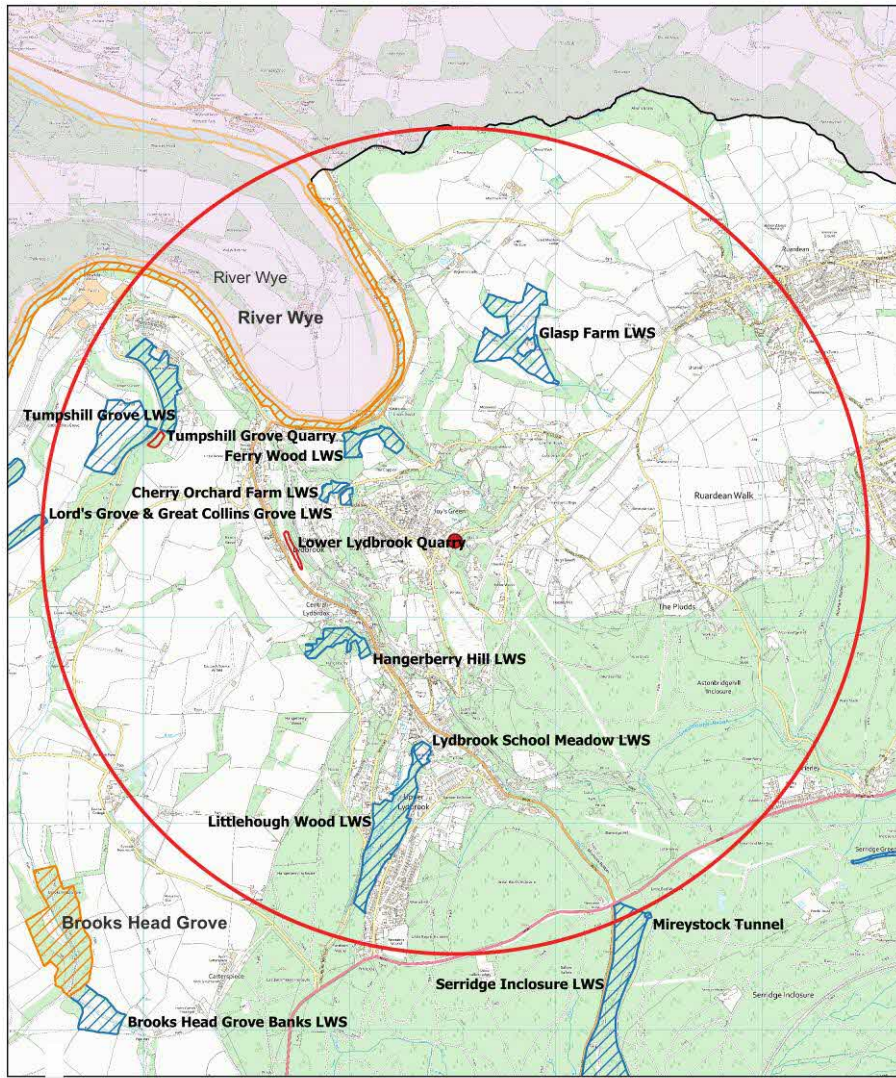
30. Pile of rocks/stones near the bungalow



31. Dense ivy on wall adjacent to the garage

Appendix 3: Designated Nature Conservation Sites in the 2km Study Area

Overview of Sites within 2km



- | | | |
|----------------|------------------------------|---------------------------------|
| Wildlife Sites | All Local Sites | RIGS |
| SSSI | Local Wildlife Site | Not Gloucestershire |
| SAC | Local Wildlife Site and RIGS | Gloucestershire county boundary |

Reproduced by permission of Ordnance Survey on behalf of HMSO.
 (c) Crown copyright and database rights [2022] All rights reserved. Ordnance Survey License Number 1000046783
 Boundaries and additional information copyright of Gloucestershire Centre for Environmental Records



Appendix 4: Protected Species Legislation

Plants

All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act 1981 (as amended). Plants listed on Schedule 8 of the Act (e.g. triangular club rush and Deptford Pink) are afforded additional protection against picking, uprooting, destruction and sale. Bluebell is protected against sale only.

Amphibians (Common Species)

Common amphibian species (i.e. common frog, common toad, smooth newt and palmate newt) are afforded partial legal protection under UK legislation, i.e. Schedule 5, Section 9 (5) of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. This legislation prohibits:

- o sale
- o transportation
- o advertising for sale

Badger

Badger is a widespread and generally common species. However, they are legally protected under The Protection of Badgers Act 1992, which is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Under this legislation it is illegal to:

- o Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so
- o Possess any dead badger or any part of, or anything derived from, a dead badger
- o Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it

A badger sett is defined in the legislation as “any structure or place, which displays signs indicating current use by a badger”.

Bats

All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act 2000 and The Conservation of Habitats and Species Regulations 2017. Together, this legislation makes it illegal to:

- o Intentionally or deliberately take, kill or injure a bat
- o Damage, destroy or obstruct access to bat roosts
- o Deliberately disturb bats

A bat roost is defined in the legislation as “any structure or place which a bat uses for shelter or protection”. Roosts are protected whether or not bats are present at the time. If a development activity is likely to result in disturbance or killing of a bat, damage to its habitat or any of the other activities listed above, then a licence will usually be required from Natural England.

Birds

The bird breeding season generally lasts from early March to September for most species. All birds are protected under the Wildlife and Countryside Act (1981) (as amended) and the Countryside & Rights of Way Act 2000. This legislation makes it illegal, both intentionally and recklessly to:

- o Kill, injure or take any wild bird;
- o Take, damage or destroy the nest of any wild bird while it is being built or in use;
- o Take or destroy the eggs of any wild bird; and
- o Possess or control any wild bird or egg unless obtained legally.

Birds listed under Schedule 1 of the Wildlife and Countryside Act (1981) (as amended) (e.g. barn owl) are afforded additional protection, which includes makes it an offence to disturb a bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Great crested newt

Great crested newts and their habitat are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act 2000 and The Conservation of Habitats and Species Regulations 2017. This makes it is an offence to kill, injure or disturb great crested newts and to destroy any place used for rest or shelter by a newt. The great crested newt is also listed on Annexes II and IV of the EC Habitats Directive and Appendix II of the Bern Convention. If a development activity is likely to result in disturbance or killing of a great crested newt, damage to its habitat etc., then a licence will usually be required from Natural England.

Hazel dormouse

Hazel dormouse and their nests are fully protected under Schedule 5 of the WCA 1981 (as amended), the Countryside & Rights of Way Act 2000 and The Conservation of Habitats and Species Regulations 2017 (as amended). This makes it offence to intentionally or recklessly: to kill, injure or take a hazel dormouse from the wild; to damage or obstruct a place used for shelter or protection; and disturb a dormouse in such a place. It is a Priority Species under the National BAP (UK BAP 2007).

Reptiles

There are six native species of reptiles in the UK, including the slow-worm (*Anguis fragilis*), viviparous/common lizard (*Lacerta vivipara*), grass snake (*Natrix natrix*) and adder (*Vipera berus*), smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*), which are afforded varying degrees of protection under UK and European legislation.

Slow-worm, viviparous/common lizard, adder and grass snake are protected under Schedule 5, Section 9 (1 and 5) of the Wildlife and Countryside Act 1981 (as amended) and the Countryside & Rights of Way Act 2000 against deliberate or reckless killing and injuring and sale.

Appendix 5: Procedure to Follow if Bats are Discovered during Building Works

- If at any point in the building extension/demolition works bats are discovered then contractors must stop work immediately and telephone Udall-Martin Associates Ltd. on 07954 160468/07968 030448.
- Udall-Martin Associates Ltd. will either provide an appropriately licensed bat worker to the site or provide a member of staff who will liaise directly with Natural England. Actions will then be taken following advice given. This may include removal of bats, but only where direct written or verbal permission is gained from Natural England.
- Bats are a protected species and there should be no attempt to handle a bat if discovered. The bat should be covered with a light material (cloth) and the bat ecologist called out to carry out the rescue.
- Only when Natural England is satisfied that the risk to bats is ceased will works recommence.
- Should it transpire that the operation being carried out is of more risk to bats than was originally thought, then works will be stopped until they can be supervised by an appropriately licensed bat worker.
- If a bat is found under roofing material or within any other niche to the building fabric, works will stop immediately (as above). If the bat does not voluntarily fly out, then the aperture will be carefully covered over to protect the bat(s) from the elements, leaving a small gap for the bat to escape voluntarily. Any covering should be free from grease or other contaminants, and should not be a fibreglass-based material.

Appendix 6: Native Species Suitable for Planting and Sowing

All plant species will be of native British origin, preferably of local provenance (genetic stock), obtained from commercial specialist 'wildflower' nurseries.

1. Native Wildflower Broadleaved Species for Grassland Diversification

Herbs	
Agrimony	<i>Agrimonia eupatorium</i>
Betony	<i>Betonica officianalis</i>
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Common knapweed	<i>Centaurea nigra</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Field scabious	<i>Knautia arvensis</i>
Harebell	<i>Campanula rotundifolia</i>
Lady's bedstraw	<i>Galium verum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow clary	<i>Salvia pratensis</i>
Meadow crane's-bill	<i>Geranium pratense</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Red clover	<i>Trifolium pratense</i>
Salad burnet	<i>Poterium sanguisorba</i>
Selfheal	<i>Prunella vulgaris</i>
Wild basil	<i>Clinopodium vulgare</i>
Wild carrot	<i>Daucus carota</i>
Yarrow	<i>Achillea millefolium</i>

2. Native Shrubs and Trees

Shrubs	
Bell heather	<i>Erica cinerea</i>
Box	<i>Buxus sempervirens</i>
Broom	<i>Cytisus scoparius</i>
Guelder rose	<i>Viburnum opulus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Heather	<i>Calluna vulgaris</i>
Holly	<i>Ilex aquifolium</i>
Lavender *	<i>Lavendula angustifolium</i>
Rosemary *	<i>Rosemarinus officinalis</i>
Trees	
Bird cherry	<i>Prunus padus</i>
Crab apple	<i>Malus sylvestris</i>
Field maple	<i>Acer campestre</i>
Rowan	<i>Sorbus aucuparia</i>
Silver birch	<i>Betula pendula</i>
Wild cherry	<i>Prunus avium</i>
Wild pear	<i>Pyrus communis</i>

* Non-native plant species

3. Native Shrub, Tree, Climbing and Herbaceous Species for Hedgerow Planting

Shrubs	
Blackthorn	<i>Prunus spinosa</i>
Dog rose	<i>Rosa canina</i>
Dog wood	<i>Cornus sanguine</i>
Elder	<i>Sambucus nigra</i>
Field maple	<i>Acer campestre</i>
Guelder rose	<i>Viburnum opulus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Holly	<i>Ilex aquifolium</i>
Trees	
Crab apple	<i>Malus sylvestris</i>
Field maple	<i>Acer campestre</i>
Rowan	<i>Sorbus aucuparia</i>
Silver birch	<i>Betula pendula</i>
Wild cherry	<i>Prunus avium</i>
Climbers	
Field rose	<i>Rosa arvensis</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Traveller's-joy	<i>Clematis vitalba</i>
Herbs	
Cow-parsley	<i>Anthriscus sylvestris</i>
Garlic mustard	<i>Alliaria petiolata</i>
Lesser celandine	<i>Ranunculus ficaria</i>
Primrose	<i>Primula veris</i>
Red campion	<i>Silene dioica</i>
Snowdrop	<i>Galanthus nivalis</i>
Wood anemone	<i>Anemone nemorosa</i>

4. Emorsgate EH1 Ground Flora Seed Mixture for Hedgerow Planting

Wild Flowers

%	Latin name	Common name
0.5	<i>Achillea millefolium</i>	Yarrow
1.2	<i>Agrimonia eupatoria</i>	Agrimony
2.5	<i>Alliaria petiolata</i>	Garlic Mustard
1	<i>Betonica officinalis</i> - (<i>Stachys officinalis</i>)	Betony
2	<i>Centaurea nigra</i>	Common Knapweed
0.4	<i>Clinopodium vulgare</i>	Wild Basil
0.6	<i>Digitalis purpurea</i>	Foxglove
1	<i>Galium album</i> - (<i>Galium mollugo</i>)	Hedge Bedstraw
1.5	<i>Geum urbanum</i>	Wood Avens
1	<i>Hypericum perforatum</i>	Perforate St John's Wort
0.5	<i>Leucanthemum vulgare</i>	Oxeye Daisy
1	<i>Plantago lanceolata</i>	Ribwort Plantain
1	<i>Primula veris</i>	Cowslip
1	<i>Prunella vulgaris</i>	Selfheal
2	<i>Silene dioica</i>	Red Campion
2	<i>Torilis japonica</i>	Upright Hedge-parsley
0.4	<i>Vicia cracca</i>	Tufted Vetch
0.4	<i>Vicia sativa</i> ssp. <i>segetalis</i>	Common Vetch
20		

Grasses

%	Latin name	Common name
10	<i>Agrostis capillaris</i>	Common Bent (w)
2	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass (w)
7	<i>Brachypodium sylvaticum</i>	False Brome (w)
28	<i>Cynosurus cristatus</i>	Crested Dogstail
1	<i>Deschampsia cespitosa</i>	Tufted Hair-grass (w)
20	<i>Festuca rubra</i>	Slender-creeping Red-fescue
12	<i>Poa nemoralis</i>	Wood Meadow-grass
80		

Appendix 7: Faunal Species Boxes Specifications

Images from Wildcare website: www.wildcareshop.com

1. Examples of Bat Roosting Boxes Suitable for the Bungalow on the Site



Schwegler 1FF



Schwegler 2FN

2. Bird Boxes Suitable for the Bungalow on the Site



Schwegler 1SP Sparrow Terrace



Schwegler 17 Swift Box

3. Hedgehog Box Suitable for a New Hedgerow on the Site



Original Wooden Hedgehog Box